

## WHAT IS CLAIMED IS:

1. A pin assembly for a BGA based IC encapsulation, comprising:

an upper cover comprising a plurality of longitudinal first channels arranged in rows and columns, each first channel including an upper first pin hole and a lower first spring receptacle in communication with the first pin hole;

a lower cover coupled to the upper cover, the lower cover comprising a plurality of longitudinal second channels arranged in rows and columns, each second channel including an upper second spring receptacle and a lower second pin hole in communication with the second spring receptacle; and

a plurality of longitudinal, conductive, detachable, and resilient pins each comprising an upper pin having a portion disposed in the first pin hole and the remaining portion projected from the first pin hole, a lower pin having a portion disposed in the second pin hole and the remaining portion projected from the second pin hole, and an intermediate resilient member in a space defined by the first and the second spring receptacles,

wherein in testing an encapsulated IC chip the pin assembly is sandwiched between the IC chip having a plurality of bottom tin balls and a circuit board of an IC test device, the tin balls are rested on the upper pins, and the

circuit board is connected to the lower pins so as to form an electrical connection between the tin balls and the circuit board.

2. The pin assembly of claim 1, wherein the upper pin  
5 comprises a concave top.

3. The pin assembly of claim 1, wherein the resilient member is a spring.

4. The pin assembly of claim 1, wherein the first spring  
10 receptacle has a diameter larger than that of the first pin hole and the second spring receptacle has a diameter larger than that of the second pin hole respectively.

5. The pin assembly of claim 4, wherein the resilient member is stopped by a joining portion of the first pin hole and the first spring receptacle and a joining portion of the  
15 second pin hole and the second spring receptacle respectively.

6. The pin assembly of claim 1, wherein the upper pin, the lower pin, and the resilient member of each of the pins are integrally formed.

20 7. The pin assembly of claim 1, wherein the upper pin, the lower pin, and the resilient member of each of the pins are separately formed.

8. The pin assembly of claim 7, wherein the upper pin  
25 comprises a bottom collar urged against a top of the resilient member and the lower pin comprises a top collar urged

against a bottom of the resilient member respectively.